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The Persistent Water Problems of Lima, Peru: Neoliberalism, Institutional Failures and Social Inequalities

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Abstract: The contingent relation between water governance and nature neoliberalisation has defined most interventions in the water sector around the world in recent years. In the case of Lima, the provision of water and sanitation services in the last two decades has been the object of investments and institutional reforms under the strong influence of economic neoliberalism. This essay examines the evolution of neoliberalising tendencies in the Peruvian capital, with special attention given to internal disputes, needed adjustments and the remaining problems. The empirical results suggest that, rather than a straightforward process, the neoliberalisation of water in Lima has advanced and mutated according to political opportunities and technico-operational constraints. The water reforms implemented in the 1990s – when privatisation was the ultimate, but unfulfilled, goal due to political opposition – can be contrasted with the more recent phase in the 2000s – which has been characterised by more flexible mechanisms, such as public-private partnerships, that seem more easily accepted by the public. Despite the renovation of the infrastructure, the modernisation of the water sector has failed to address the long-lasting causes of water management problems, namely, the discriminatory treatment of low-income residents, the chaotic expansion of the metropolitan area and the risk of future water shortages.

Key words: Neoliberalism, nature neoliberalisation, water institutional reforms, Lima, Peru, urban political ecology.

1. Introduction: Lima, Peru and the neoliberalisation of water

In the last century, Lima, the capital of Peru, experienced one of the highest rates of population growth among the large metropolitan areas of Latin America and, in 2010, reached nearly 10 million people. Rapid urban growth was certainly not uncommon to other parts of the continent, but the difficulties faced in Peru were especially challenging due to a perverse combination of managerial, political and socio-economic factors. The water sector represents an important entry point into the complexity and the contested nature of Lima's urban development. If the growing deficit of water in Lima is not dramatically different than the trend in other large metropolises (Table 1), the availability of less than 100 m^3/hab/year (below the international threshold of 500 m^3/hab/year) is an issue of serious concern. In 2010, water demand reached 25.5 m^3/s – significantly above the average supply

of 21 m^3/s – and is expected to rise to 28 m^3/s in 2015 (data from SEDAPAL, 2005). Only 32% of the metropolitan terrain is suitable for urban and agriculture development, which nonetheless did not prevent the sprawl of new settlements over ever more remote areas where there is limited access to water services. Despite recent investments in infrastructure, in the year 2007 (the last assessment available) still 8.5% of the population depended on water lorries, 3.9% on public fountains and 4.3% extracted water from boreholes or watercourses. Water scarcity has been magnified by the widespread degradation of the local catchments due to mining activities, lack of sewage treatment and inadequate rubbish disposal.

Table 1. Comparison of Water Service Statistics in Selected Latin American Cities (1990s)

	Population (million)	Connection to water supply (%)	Connection to sewage service (%)	Water reserves (m^3 per capita)	Average water availability (m^3/s)
Lima	7.1	70	69	35	25
Bogotá	5.1	n/a	n/a	123	17
Buenos Aires	12.6	n/a	n/a	n/a	85
La Paz	1.9	45	35	n/a	n/a
Mexico	22.8	n/a	n/a	n/a	50
Santiago	4.8	98	92	153	20
São Paulo	16.8	n/a	n/a	83	50-55

Sources: Verner (2010) and water companies reports
Note: Reports published by SEDAPAL in 2008 indicated water connections = 91%, sewage collection = 83%, sewage treatment = 15%, average water services = 21 hours/day, unaccounted for water = 36%

The purpose of this essay is to discuss the direction of the official responses to water management problems, the ongoing institutional reforms and the prospects for the future. Underpinning our analysis is the fact that the neoliberal programme of economic adjustments, adopted since 1990 in Peru, has directly influenced the reconfiguration of the water utility of Lima (SEDAPAL). For more than two decades, water has been treated as a resource with monetary value, technocratic relevance and strategic political significance.

We claim that, more than simply dealing with the deficit of public services, interventions in the water sector have played an important role in the justification of wider market-based policies championed by the national state. Because of the introduction of new legislation, investment programmes and management approaches, the water sector of Lima is now accessible to some of the largest international construction companies and private service providers. Lima constitutes an intriguing example of a city with a large contingent of low-income residents with restricted access to public water services (i.e. around 43% of the residents still live in illegal or semi-illegal dwellings), but where considerable sums of money now circulate through water tariffs, local water vendors and contracts with private organisations.

The expansion of neoliberal agendas over water use and conservation in Peru has been examined by various authors (see Guevara Gil, 2009), but the more complex articulation of the political nexus between the technical and economic dimensions of the neoliberalisation of water in Lima has received only scant attention. Despite the fact that similar studies have been conducted on the neoliberalisation of water in Cochabamba, Guayaquil and Buenos Aires – just to mention some experiences in the region – the specific situation of Lima remains understudied. Compared with other cities, Lima offers a more emblematic case study, given the fact that the assets and the operation of the public water utility have remained in the hands of the national government. Our intention is to unpack the idiosyncratic evolution of the neoliberalisation of water in Lima and assess the main achievements and failures of the processes of change. The analysis is based on a research fieldtrip that took place between March and June 2009 and included the review of policy documents and archival information (particularly at SEDAPAL, the regulatory agency

SUNASS and the National Library), regular visits to communities in the periphery and the attendance of public events related to water services, as well as interviews with local residents, regulators, policy-makers and representatives of multilateral agencies.

The introduction of neoliberalism in Peru came out of the turbulent transition from the statist government of Alan García in the 1980s to a more techno-authoritarian regime in the 1990s. The election of Alberto Fujimori (1990-2000) paved the road for a complex alliance between national and international business groups that was encouraged by the neoliberal canon. In 1992, the regime became semi-dictatorial, which facilitated the replacement of an underdeveloped form of Keynesianism with structural adjustments aimed to stabilise the economy and bring inflation under control (Gonzales de Olarte, 1998). The economic stabilisation programme promoted a dramatic reduction of state costs at the expense of labour reforms and extensive privatisation (i.e. more than 200 state companies and shares equivalent to US$ 8.86 billion, cf. Pozo, 2006). Fujimori's government became increasingly associated with corruption scandals involving not only ministers and high office-holders, but there were evidences of the president himself taking part in frauds (Durand, 2003). With mounting pressures and economic troubles, the administration eventually collapsed, after a decade in power, which led to significant political uncertainty about Fujimori's succession.

As happened in Chile, the transition to re-established civil liberties and formal democracy, after a negotiated transition, was not followed by changes in the overall direction of the economy. The neoliberal surge was proved to be very resilient and was resumed after the election of President Alejandro Toledo (2001-2006), an economist with professional connections with the international financial system. In 2002, Toledo instituted

a new agency (PROINVERSIÓN) dedicated to attract and support private investors, including the participation in public water utilities. Toledo's initial popularity was quickly eroded, due to a technocratic style of government and clashes with the congress (Murakami, 2008), which led to the surprising victory of Alan García, the president responsible for the macroeconomic instability in the 1980s, in the 2006 presidential election. After the ratification of the Free Trade Agreement with the USA in 2007, the parliament delegated to the new president the fast-track authority to legislate for six months on matters related to that agreement. Among the legislation approved, Decree 1081 replaced the previous water law with a centralised legislation with limited public accountability and facilitated participation for private investors (it was converted into a new water law in March 2009, which frustrated a large-scale mobilisation carried out by organised sectors of society).

The second García government effectively consolidated the populist face of neoliberalism in Peru, but paid less attention to the legacy of inequality and social exclusion, which compromised the electoral prospects of his political group in the 2011 election (eventually won by the nationalist candidate Ollanta Humala). The most conspicuous outcome of the Peruvian experiment of neoliberalism has been the profound dichotomy between macroeconomic results (e.g. nearly a decade with positive rates of growth) and pending social and political demands (e.g. according to the national statistics office [INEI], around 40% of the population of Lima earn less than US$ 90 per month and are in a condition of poverty or extreme poverty). In 2008 the economy expanded by 9.8%, at the same time the number of people with inadequate nutrition increased by 11% (affecting then 34% of the national population). Likewise, the number of socio-natural

conflicts in the country increased at fast rates (more than 150% between 2008 and 2009) and included 244 water-related disputes in the year 2010 alone (El Comercio, 2010).

The next pages will demonstrate how the water sector of Lima epitomises an important chapter in the expansion and malleability of neoliberalism in Peru. The particularities of the local experience are highly relevant for the provision of water services and, ultimately, for the prospects of nature neoliberalisation in the Global South. Particularly in Latin America, neoliberalism has become the dominant economic paradigm since then end of the 1980s (Lara and López, 2007), as both a productive and destructive phenomenon that exacerbates, rather than reduces, the uneven geographies of development (Perreault and Martin, 2005). Yet, the impacts on the local environments of Latin America have varied greatly between nations and places due to different political, institutional, economic, environmental and social conditions (Liverman and Vilas, 2006), as well as due to the persistent resistance and systematic contestation by grassroots movements (Perreault, 2008). Before considering the case of Lima, it is necessary to review some key theoretical issues related to the neoliberalisation of nature.

2. Water management and the neoliberalisation of nature: methodological and conceptual claims

Water management reforms and water policy-making are central elements of the contemporary debate on the sustainable use of natural resources. A range of regulatory and technical adjustments was introduced in recent decades under the banner of ‘water governance’, which aim to reduce environmental impacts, improve user efficiency, secure additional supplies of water and promote a more flexible decision-making (Ioris, 2008).

The search for water governance, rather than the traditionally centralised interventions of government agencies, coincided with the wider reconfiguration of the national state under neoliberal pressures since the late 1970s. The expansion of the neoliberal order has not been restricted to changes in monetary and production spheres, but neoliberalism has been also a intensely environmental project (McCarthy and Prudham, 2004), a process of change that has fused the protection of ecosystem services (McAfee and Shapiro, 2010) with the mounting encroachment and enclosure of nature (Heynen and Robbins, 2005). Instead of a complete removal of the state, environmental governance promotes the re-regulation of the use of natural resources through a combination of state-oriented and market-oriented approaches (Mansfield, 2007), in a way that redraws the public-private divide through the dispersal of state functions upwards, downwards and outwards to non-state actors (Reed and Bruyneel, 2010).

The ‘neoliberalisation of nature’ has been the object of a vast academic investigation, particularly among human geographers, who have tried to explain the host of spatio-temporally differentiated processes that facilitate the accumulation of capital through changes in environmental management. Geographers have indeed produced some of the most perceptive assessments of the contradictory and multiscale dimensions of neoliberalism (Jonas, 2006), working, for example, on material processes, on issues of scale-crossing and scale-jumping, as well as on the remarkable array of places, regions and countries affected by the neoliberalisation of nature (Castree, 2008a). Even so, nature neoliberalisation is still too often described in generic terms or focused on the specific details of localised case studies, with only limited attempts yet to make sense of the socio-environmental circumstances and their connection with broader politico-economic drivers.

Castree (2008a) underscores the dynamic and plural basis of the encounter between nature and neoliberalism, which is demonstrated by the myriad of mechanisms (i.e. 'biophysical fixes') available to insert nature in market-based relations. As a result, case studies have the methodological weakness of restricting the comparison of territorialised experiences and marketisation strategies (Castree, 2010). As a result, the author recommends a middle way between the Scylla of monolithic understandings of neoliberalism and nature, and the Charybids of empirical studies that do not admit of wider comparisons.

Nonetheless, despite Castree's condemnation of the widespread use of case studies, it is important also to insist that the interactions between nature and neoliberalism are plural, multifaceted and difficult to generalise. Neoliberalism is, ultimately, the quintessential face of late capitalism – which emerged as a response to the crisis of profitability and mounting impacts during the state-led, Keynesian phase of the economy – and operates as a both a product of, and a driver toward, the reconfiguration, enclosure and control of socio-natural systems (Heynen et al., 2007). Springer (2010) further advises that neoliberalisation should be considered as a hybrid, dynamic process that is expressed as a hegemonic ideology, as a policy-based approach to state reform or as a particular logic of Foucauldian governmentality. Consequently, notwithstanding their obvious shortcomings, case studies remain a powerful tool to investigate the complexity, unevenness and messiness of the expansion of neoliberalism over socio-natural systems. Sangameswaran (2010) adds that institutional reforms have been examined from different perspectives, including politico-economic approaches and the cultural constitution of the state, but case studies continue to play an important role in the study of the neoliberalisation of nature. While Castree (2008b: 166) calls for a more concerted effort to synthesise the plurality of

nature neoliberalisation experiences, he also recognises that researchers "actively make choices [to mirror the world they are investigating] that require justification and reflexivity". In the end, allowing for their intrinsic limitations, case studies continue to provide insightful, and needed, accounts of the intricacy of disputes and interactions that follow the imposition of the neoliberal rationality over nature and natural resources.

In that regard, the reform of water management constitutes a privileged example of the neoliberalisation of nature and the creation of new mechanisms of capital accumulation under the flexibilisation principles of environmental governance. The 'neoliberalisation of water' includes a range of practices and institutional adjustments that expand the reach of market rationality to activities such as water abstraction, distribution and conservation. It encompasses the displacement of conventional government interventions by market priorities and the growing adoption of joint ventures between state agencies and the private sector.[i] Budds (2004) considers the implementation of those reforms as the ideological affirmation of the monetary value of water, which happens through the development of water permit markets, the search for different types of utility privatisation and the adoption of market-based forms of water regulation. Bakker (2005) describes this array of institutional reforms as a movement from the 'state hydraulic paradigm' to the neoliberal 'market environmentalism paradigm', which corresponds to the transition from Keynesian economic policies to a new phase when market transactions have become the metaphor for the interactions between nature and society. For Bakker (2005), the neoliberalisation of water is the outcome of several overlapping forces, such as commodification (market exchange of water processes previously outside marketised spheres), commercialisation (adoption of commercial principles and methods) and privatisation (changes in resource

and utility ownership). Furthermore, while the discourse of water governance has incorporated the language of rights and public participation, it continues to be articulated within neoliberalism's individualist ontology and its dedication to economic growth above broader social and environmental considerations (Roberts, 2008).

The above publications emphasise the myriad of market-based adjustments associated with water neoliberalisation, as a crucial driving force behind the allocation, use and conservation of water resources nowadays. However, there is still limited consideration in the literature of the persistence and malleability of neoliberal reforms affecting the water sector across different government administrations and under changing political contexts. A proper investigation of water neoliberalisation needs to go beyond conceptual simplifications or dualisms (Ahlers and Zwarteveen, 2009) in order to consider the complex, and often contradictory, advance of neoliberal policies in specific circumstances and locations. It is worth mentioning that a growing number of studies, particularly in Latin America, have provided a critical assessment of the geographical complexity of neoliberal policies and pointed out the persistence of unhelpful dualisms, such as nature-society, male-female and rights-efficiency (for example, Boelens and Zwarteveen, 2005). The results of those critical studies suggest that special attention needs to be given to the resilience of neoliberal strategies and the ability to compromise between market and non-market mechanisms of water management (particularly in the more nuanced situations where formal privatisation was not an immediate option, as in the case of Lima).

We claim that the decisive element of such longitudinal analyses is the political nexus between economic goals and technical interventions. Underpinning our conceptual framework is the assumption that the neoliberalisation of water entails a set of new

procedures that help to invigorate the logic of capital accumulation through the private appropriation of collective resources by the stronger social groups. Changes in the discourse and in the symbolism of water management, such as the growing emphasis on cost recovery, economic efficiency and the monetary value of water, all reflect the political priorities of hegemonic groups and the wider balance of power in society. Likewise, the international experience demonstrates that success of neoliberalising strategies in the water sector depends, first and foremost, on the negotiation capacity of government officials and private companies, who often need to persuade a normally sceptical public of the benefits of water neoliberalisation (Dosh et al., 2010; Mustafa and Reeder, 2009). Through the application of such politically sensitive framework, the water sector of Lima provides a vivid example of the contested basis of the adjustments associated with water neoliberalism, as the following discussion reveals.

3. Aims, achievements and limits of the neoliberalisation of water in Lima

3.1. Introduction and early results

The first phase of the neoliberalisation of the water in Lima in the 1990s took place in a unique historical and political juncture, which combined the long-term failures of the water services and the aggressive pro-market policies brought by President Fujimori. The mounting water problems in the capital were directly associated with the chaotic and discriminatory pattern of urban growth during most of the 20th century. Lima experienced unparalleled rates of demographic expansion between the 1950s and 1980s, including the staggering figure of 5.4% per year between 1961-72 (IMP, 1989). The majority of migrants from rural areas and provincial towns initially moved to slum tenements (*tugurios*) established in old buildings in the historical centre of Lima. Gradually, the *barriada*

(squatter settlement) became the main alternative to the incoming population. The barriada is a form of urbanisation where first the plot of land is obtained (normally by invading the area) and the households are constructed without the existence of any urban infrastructure or public services (Barreda and Ramirez Corzo, 2004). As a result, valueless pieces of land around the city were quickly engulfed in the creation of new barriadas (Figures 1 and 2). The consolidation of the barriadas was a major feature of the expansion of Lima (Driant, 1991) and ended up establishing an overarching pattern of spatial segregation between rich and poor, centre and periphery (Calderón Cockburn, 2005).

Despite some localised concessions from the state apparatus during the period of rapid urban growth, the evolution of water supply and, in a much smaller proportion, sanitation followed the dual-track urbanisation of Lima, in the sense that it was mainly the 'legalised' part of the city that was reasonably served by the public utility, while most of the population had to resort to various strategies to guarantee their access to water (Matos Mar and Matos Lagos, 1990). The structure and operation of the water industry of Lima maintained the double standard of services, at the same time that it had to respond to broader changes in the economy and in the national state. With the return of democratic rule in the early 1980s, the utility was reorganised and received its current designation, SEDAPAL (Service of Potable Water and Sanitation of Lima). SEDAPAL was the key utility of the National Water and Sanitation Corporation (SENAPA), which didn't prevent its reputation for poor performance and lack of investments. The meagre investments in water infrastructure were mostly directed to the consolidated neighbourhoods and new high-income areas of the Peruvian capital (Zolezzi and Calderón, 1987). At the time of the election of Alberto Fujimori, a quarter of the metropolitan population did not have domestic

water supply and a third was without sanitation (IMP, 1989). The scale of the problem was tragically confirmed when an outbreak of cholera erupted in 1991 (after a century with no similar incidents) and killed more than 153 persons in Lima alone (Ghersi and Ñaupari, 2005).

Fujimori had specific plans for the water sector of Lima and saw it as a privileged opportunity to both attract private business the country and, crucially, to increase his fragile political legitimacy since the turbulent election in 1990. As happened in other countries (see Schwartz, 2009), water sector reforms that had been considered for years were precipitated by an acute crisis situation and the severe water deficit in Lima provided an apt excuse for the advance of neoliberalising strategies. In the first moment of the neoliberalisation of water in Peru, the priority of the national government was to prepare SEDAPAL to be privatised. That was preceded by a series of institutional and regulatory adjustments. The National Water and Sewerage Programme (PRONAP) and a new regulatory agency (SUNASS) were both created in 1992, at the same time that SENAPA was extinct and services returned to the local and regional administrations (i.e. the entire water sector was devolved to municipal or provincial providers, with the important exception of SEDAPAL due to its political relevance). As part of the same process, the government received a World Bank loan of US$ 600 million to reorganise the water services of Lima, which also included the readjustment of customer tariffs and systematic reductions in the workforce.

The improved balance sheets, the restored liquidity of SEDAPAL and the potential for making money did not go unnoticed, but three large international consortiums prequalified to bid for the privatisation of the water service in November 1994. Because of

the scale of its operation, the transfer to the private sector attracted great interest and was the object of intense media coverage. Moreover, due to organisational delays and some political hesitation the tender was postponed until after the 1995 re-election of Fujimori, followed by a series of further adjournments. The privatisation of SEDAPAL was officially and definitively cancelled in 1997, which frustrated the international business community and the multilateral agencies involved in the tendering process. Based on our interviews, it seems that two main concerns undermined the acceptability of the privatisation by the general public: first, the certainty of much higher tariffs (i.e. the concessionary would have to make a fourfold increase to cover contractual requirements) and, second, the fact that the national state would still have to invest in the procurement of new sources of water (i.e. despite privatisation, the production of water would remain in the hands of the government). Because of those two main issues, the political price of privatisation was not affordable to Fujimori, particularly when his popularity was declining due to economic problems and Lima was one of his main political strongholds.

With privatisation losing its momentum, SEDAPAL embarked upon an extensive programme of infrastructure and operational efficiency, which included a pipeline scheme to transfer water from the Andes to the metropolitan area (CENCA, 1998). In 1998, the water utility was transformed into a ‘plc’ and then incorporated in the portfolio of FONAFE (the government corporation in charge of the entrepreneurial activity of the state). Those measures ended up alleviating the level of problems and, contradictorily reducing the appetite for privatisation within the national government (reinforced by ministerial replacements that removed the more orthodox neoliberals). It demonstrates that the liberalising goals are not achieved only through privatisation, higher tariffs and cost-

recovery procedures (cf. Narsiah, 2010), but investments directly and indirectly funded by the state are also a prime component of water neoliberalisation.

At the turn of the century, the public image of the water utility had improved, but mainly among higher income residents, while there were widespread complaints about tariffs, mistakes in the water bill and in the water meter (ICOM, 2001). Thirty-three, out of the 49 municipalities of Lima, had still systematic water rationing and intermittent services affecting around 70% of the population. The water utility was responsible for inadequate system maintenance, a high level of unaccounted-for water, excess staff, low metering rates, low water quality and, more significantly, was fraught with political favouritism (Corton, 2003). There persisted a pattern of inequality with higher levels of water use in the wealthiest areas (330 l/day/inhabitant) than in the lower income neighbourhoods (103 l/day/inhabitant), according to SEDAPAL (2005). Because of macroeconomic constraints and the exhaustion of the initial neoliberal reforms, the level of national investments in the water sector had declined from US$ 228.9 million/year in the 1990s to US$ 166.6 million/year in the period immediately after Fujimori's removal. A 2003 poll detected that half of the utility clients declared perceived improvements in the quality of the service, whilst the other half either didn't notice any significant change or strongly complained about the utility's performance (SEDAPAL, 2005). Around 50% of those dissatisfied with SEDAPAL rejected the need to raise water tariffs and mentioned problems such as service restrictions and interruptions in the supply.[ii]

Overall, it is undeniable that the first phase of the neoliberalising process achieved significant managerial recovery and brought substantial investments in the water infrastructure of Lima. However, that happened at the expense of authoritarian

governmental interventions that failed to produce a lasting response to the looming risk of higher water shortage, particularly in the periphery and more recent settlements. On the contrary, investments and institutional reforms under neoliberal priorities never challenged the prevailing inequalities between social groups and spatial locations. Although the neoliberalisation of water was justified on technical and economic grounds, the main driver of the new policies was political. Fujimori was forced to react to a situation of acute water crisis and perceived in it the potential for attracting private water operators to Peru. Privatisation was one of the central recommendations of multilateral agencies and was financially assisted by loans and technical assistance provided by organisations such as the World Bank. However, more important than privatising the public water utility was to maintain his political support in Lima. In the end, water proved to be a challenging sector for the neoliberal ideologues and politicians, who nonetheless learned from the experience of the first decade of reforms. An amended approach to water neoliberalisation was put in practice in the second decade, after the debacle of Fujimori.

3.2 Adjustments, political changes and the consolidation of water neoliberalism

The first period of water institutional reforms in Lima coincided with the government of Alberto Fujimori and achieved a partial, but significant recovery of the water utility. Both before and after the aborted privatisation of SEDAPAL, the sector received substantial investments from the national government and from rising water tariffs. According to its own terminology, the 1990s were considered by SEDAPAL (2005) as the ‘preparatory phase’, which was supposed to be followed by the ‘improvement phase’ in the 2000s. Despite such optimistic intents, around the year 2000 the services were fraught with problems and insufficiencies, particularly in the periphery and in the new

settlements around Lima. The National Plan of Sanitation, published in 2006, made clear the lingering problems left by the initial years of the neoliberalisation of water and the difficulties faced by President Toledo: because of deficient coverage, bad quality of services, unskilled staff and institutional weaknesses, SEDAPAL still needed something like US$ 1.2 billion worth of investments to secure a more reliable and comprehensive level of services. Yet, during most of the Toledo administration the total of investment remained relatively flat, only improving in the final years of his government due to new international loans.

The need to address those pending problems, inherited from the previous decade, was perceived by Alan García during his presidential campaign in 2006. After the semi-authoritarian years of Fujimori and the turbulent transition under Toledo, García seemed to be the best candidate to personify the subtle changes required to move forward the neoliberalisation of water in Lima. The appealing discourse of economic development and social inclusion articulated by García, combined with a solid parliamentarian majority, provided the political weight to reinforce the neoliberalisation of water in Peru. As an experienced politician, the solution to the deficit of water Lima became one of the pillars of García's electoral manifesto. The willingness of the new government to embrace and move forward the neoliberalisation of water came through the programme Water for All (APT) that was launched in 2007 with a portfolio of 150 projects and a budget of US$ 270 in investments in the water sector of Lima.

It is highly emblematic that APT created novel opportunities for foreign companies to participate in the water services of Lima without the need to sell the ownership of the water utility. Private companies were able to bid for contracts related to mega-engineering

projects, which included the construction of the Huachipa water treatment work (US$ 271 million) and the expansion of the system in the North Cone of Lima (US$ 250 million), both financed with public funds and foreign loans. In addition, a series of public-private partnerships (PPPs) worth more than US$ 600 million were included in the investment programme, such as a new project to transfer water from the Andean mountains, a water desalination plant and two sewage treatment plants. Sustained increases in water tariffs were approved by the regulator (SUNASS) in order to cover the construction of those infrastructure projects (i.e. 10.37% for Marca II, Huachipa, Ramal Norte and Ramal Sur, and 12.31% for the Taboada sewage treatment plant and a submarine sewage pipeline).

The second decade of water neoliberalism was characterised by an increasing complexity and diversification of procedures. The intensification of business transactions involving water has gone much further than large infrastructure projects, but began to permeate most of the public policies on water services. The introduction of neoliberal reforms has not only led to higher complexity of public water services, but also incorporated new agencies and stakeholder groups (Figure 3). Because of the introduction of new utility legislation, SEDAPAL is now supposed to respond to regulatory agencies and various branches of the national, regional and local governments. In addition, organised communities, NGOS, academics and think-tanks are increasingly involved in the debate about water management in Lima. Even so, as mentioned in several of our interviews, the relation between SEDAPAL, the regulators and the public remains fraught with tensions and criticism from all sides. SEDAPAL's formal mission is to serve the population, but the public has systematically expressed their frustration with the level of service and with the direction of contemporary policies. If neoliberal policies improved the performance of the

water services, some residents have systematically tried to subvert SEDAPAL's attempt to monitor domestic water use, for example, with the significant increase in equipment robbery (such as water meters) and cases of vandalism.

The current state of affairs has been also criticised by union leaders and NGO activists for the lack transparency and the repeated evidences of corruption (for a political demonstration against the water policies under Alan García, see Figure 4). Moreover, most of the organised protest against the neoliberalisation of water is now confined to the National Federation of Workers in Water and Sanitation (FENTAP) and some other critical think-tanks, what contrasts with more active mobilisation in the 1980s and 1990s. Interestingly, the actual course of the water reforms has not even pleased those sectors that call for a more orthodox neoliberal approach. Some regret the fact that, in the end, SEDAPAL was not privatised, which would have represented, in their view, higher gains in efficiency and economic rationality. In our interviews, such opinion was expressed by the executives of the various international agencies with representation in Peru, as well as consultants and academics involved in the formulation of recent projects and plans. The fundamental criticism among those advocates of neoliberalism is that, in spite of significant works being now built by the private sector, the source of investments remains in the hands of the national government. The critique is that the expansion of the water infrastructure in Lima, for example via the APT programme, is going to be paid by mainly the government rather than by the persons who will directly benefit from the water works (i.e. the customers of SEDAPAL). The same critics also point out that it is also not clear whether the APT programme will have enough money to fulfil all its targets, particularly in a situation of international financial instability since 2008.

The local experience shows that, as in other countries, the national state remained the main player and the ultimate guardian of water neoliberalisation. State interventions were required in order to minimise the risk for private business and to guarantee the acceptance of private operators and construction companies by the public. Exactly because of the 'moderator role' performed by the national state, water tariffs have stayed relatively low when compared with similar cities in the continent (despite successive increases): typically, the low-income families spend a little less than 5% of their income on water services, which is the common threshold adopted to assess water affordability (cf. SUNASS statistics). Nonetheless, there is a high probability that tariffs will have to increase significantly in the near future to maintain the level of profit margin and attract more private companies. It should also be noted that, despite its formal responsibilities, the regulatory agency (SUNASS) has had only secondary interference in the key decisions regarding investments and tariffs. When it was formed in the early 1990s, SUNASS was expected to supervise and also support the water utilities. But the modest improvement of the water services during most of the last two decades demonstrates that SUNASS lacks the instruments for penalising water utilities for their failures (Lin and Berg, 2008) and for avoiding political interferences (ACDI, 2001). The main challenge faced by SUNASS has been the implementation of an objective price setting formula that allows the tariffs to gradually increase in order to reflect the long-term marginal cost of the service. Nevertheless, in practice tariffs have been mostly manipulated according to the political priorities of different administrations.

Overall, when contrasted with the first period of water neoliberalisation in the 1990s, the second decade revealed a complex combination of continuity and change. On the

one hand, the water sector of Lima continued to be the object of substantial public investments that attracted international construction companies and private operators. Whilst maintaining the public ownership of SEDAPAL, the water industry of Lima has become a privileged arena for the circulation of capital associated with the increasing commodification of nature. Different presidential administrations took the opportunities available to try to overcome institutional barriers and to promote pro-market strategies. On the other hand, the justification and the discourse associated with the water reforms became gradually more sophisticated in the second decade. Fujimori had to cope with an initial situation of crisis in the water services and soon intended to privatise the public utility. Once privatisation was not possible due to political reasons, the government somehow reintroduced the conventional type of centralised investments that were used in previous decades. García, on the contrary, adopted a more nuanced approach that combined democratic promises (represented by the slogan 'water for all') and the creation of profitable opportunities for private businesses. The public image of water neoliberalisation became apparently more friendly, which nonetheless did not conceal the contradictions and tensions of the public-private alliances. For around a fifth of the population, the colourful advertisements of the new water works, constantly broadcasted in the Peruvian media, have been nothing by a cynical manipulation of the promises of equitable services and social inclusion.

4. Conclusions: Resilience and contradictions of the neoliberalisation of water

This brief analysis addressed the main political trends of the neoliberalisation of water in Lima and the systematic adjustments needed to sustain the institutional reforms across different political regimes (i.e. from semi-authoritarianism to the return of formal

democracy). The neoliberalisation of water has consisted of a multi-stage, hybrid phenomenon that unfolds simultaneously in technical, commercial and discursive directions, as an adjunct of wider policies aimed to improve capital accumulation. Moreover, the introduction of water neoliberalism was by no means a necessary outcome, but was the result of specific geographical circumstances at the end of the 20th century. The institutional reforms followed a non-linear, opportunistic pattern of development that required significant modifications from one decade (1990s) to the next (2000s) in order to allow for the expansion and consolidation of market-based initiatives. The combination of firm policy goals and constant policy revisions represent sophisticated approaches to maintain water in the sphere of market-based strategies. In that process, the advocates of the neoliberalisation of water have learned a great deal from the failures of the initial privatising model and have had to deal with the negative reaction of water users. What is particularly relevant in the local experience, and contributes to broaden the body of academic literature on the neoliberalisation of nature, is precisely this persistent enhancement of the neoliberalisation of water through subtle mechanisms of change and continuity.

Therefore, the main contribution of the current study is to show the resilience and mystification of the institutional reforms introduced two decades earlier, in spite of noticeable limitations and growing contradictions. It is clear that the public water services of Lima have experienced significant renovation in the last two decades and moved away from traditional government interventions and in favour of the flexible patterns of governance. The neoliberalising strategies incorporated elements of public participation, environmental sustainability and even social justice, without compromising on incentives

for the circulation of capital and the maximisation of private profits. Because of the ideological and economic commitments, the process has proved to be surprisingly resilient and has spanned four presidential administrations (including the current mandate of the leftist President Humala). Particularly during the García administration, the water industry of Lima became a favourite locus for investments and business transactions in the form of public-private partnerships, but the more explicit discourse on social inclusion and on the universalisation of services – trademarks of his government – also helped to legitimise neoliberal policies. It is estimated that more than three billion dollars have been invested in the last 20 years in Lima, but to a large extent it depended on higher tariffs, foreign loans and exploitation of working force. Likewise, while substantial sums of money have been invested in infrastructure and management, neoliberal policies have so far failed to address the long-lasting causes of water management problems, namely, the risk of renewed water shortage due to environmental degradation and chaotic city expansion.

More importantly, because of the elitist basis of the local water policies, most of the responses actually tend to aggravate the overall pattern of social and spatial discrimination. Both people and nature have become entangled in the implementation of neoliberal reforms, which have persistently overlooked the concerns of the grassroots communities living in periphery and marginalised areas of the Peruvian capital. As a result, inequality, clashes and favouritism continue to characterise the public water services of Lima and, ultimately, undermine operational and technical improvements achieved in recent years. Much less attention has been dedicated to creating specific solutions to the water problems in different parts of the capital or to increasing the reliability of the water system. Due to the symbolism attached to large-scale projects, community-based, low-cost alternatives are

largely disregarded as unfeasible and irrelevant. In addition, the relation between the water utility (SEDAPAL) and the population has been marked by selective channels of communication that ignore the demands and the political organisation of the periphery. In the end, the considerable complexity of the ongoing water reforms, together with aggressive advertising campaigns, populist government propaganda and the dissimulation of the asymmetry between gains and losses, may have affected the mobilisation capacity of low-income communities and weakened the leadership of protest groups. However, with the costs, the insufficiencies and the contradictions of the neoliberal initiatives becoming increasingly more evident, these contain the seeds of further political contestation.

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[i] These increasingly include 'public-private partnerships' (or PPPs), which comprise various possible arrangements with different levels of commitment, profitability and risk. The options with lower risk include service contract, management contract and lease contract; medium risk options include various forms of concessions and the widely used mechanism known as 'build, operate and transfer' (BOT); more complex and riskier alternatives are mixed financed companies, utilities partially owned by the government and full divestiture (or privatisation).

[ii] The annual rates of increase in water supply and sanitation tariffs in Lima were: 17% (1995), 10% (1996), 19% (1997), 14% (1998), 9% (1999), 9% (2000), 2.8% (2002), 3.0% (2004), according to SEDAPAL (2005). The average tariff rose from US$ 0.39/m^3 in 2001 to US$ 0.77/m^3 in 2008 (an increase of 97.4% in dollar).

Figures

Figure 1 – Image of Pachacútec, in the North Cone of Lima, with a significant proportion of the population relying on water tanks

Figure 2 – Water lorry filling a water tank in Pachacútec (alternative supply system)

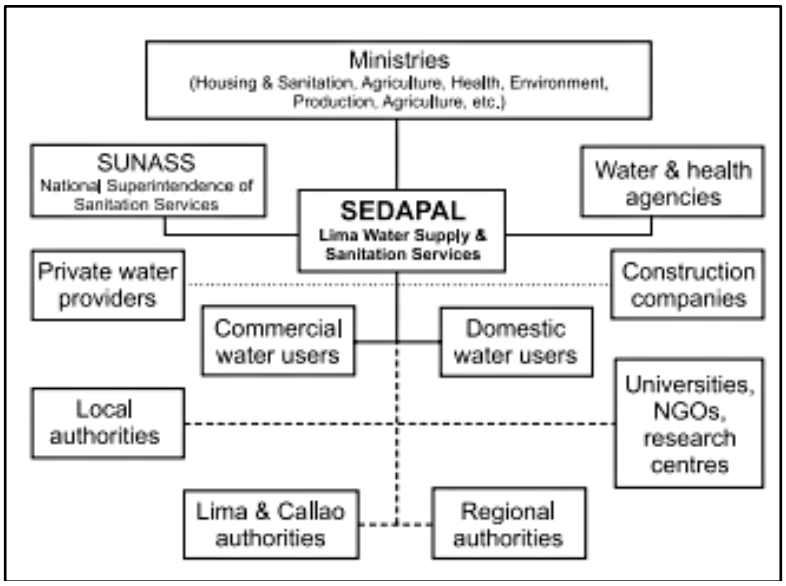

Figure 3 – Schematic representation of the main water stakeholder groups of Lima

Figure 4 – Political protest against the neoliberal water policies of Peru